

PATENT CLAIMS

1. Device for use in a vehicle (1), for transmitting drive force (F) from at least one first wheel (2) to at least one second wheel (3) by means of a hydrostatic transmission arrangement (10, 11, 12, 13), characterized in that the arrangement comprises a hydrostatic pump (10a), which can be driven with the first wheel, preferably via the vehicle engine, a hydrostatic drive assembly (11), connected to the pump by a hydrostatic line system (12, 13), for driving the second wheel, and one or more members (19, 20) which wholly or partially bridge or disconnect or reconnect the drive assembly, which member(s) is/are arranged to directly or indirectly detect and/or influence driving situation(s) for the vehicle and, should changes occur, to cause or bring about the full or partial bridging or disconnection or reconnection of the assembly.
2. Device according to Patent Claim 1, characterized in that the said member(s) (19, 20) comprise(s) a bridging duct (19), forming part of the hydrostatic line system, and a unit (20) arranged in the system and provided with a temperature-sensitive member and with members (39, 41) which connect and disconnect the bridging duct in dependence on the temperature.
3. Device according to Patent Claim 2, characterized in that the temperature-sensitive member(s) comprise(s) bodies (26 and 35 or 36) having different thermal expansion coefficients, and in that the connecting and disconnecting member(s) is/are arranged so as to be actuated by relative movements between the bodies.
4. Device according to Patent Claim 3, characterized in that the temperature-sensitive member(s) comprise(s) a first body consisting of fluid (35), for example hydraulic oil or wax(es) (36), and a second body (25) made of metal, for example aluminium, alloy, steel,

etc., and in that the connecting and disconnecting members comprise a cone or needle, arranged such that it can be actuated by the said first body, and a seat (41) belonging to the cone or needle.

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5. Device according to Patent Claim 1, characterized in that the arrangement comprises a regulator function, for example a regulating valve, arranged to produce a continuous or step-by-step variation, for a medium used 10 in the arrangement, upon the occasion of the said bridging or disconnection and reconnection.

6. Device according to Patent Claim 1 or 5, characterized in that the control valve comprises a 15 pressure-regulating or flow-regulating valve and is arranged such that it can be controlled by means of an electric, mechanical or temperature-detecting member.

7. Device according to any one of Patent Claims 1, 2, 20 3 or 4, characterized in that the body or bodies is/are chosen with thermal expansion coefficients and the cone and the seat are arranged to allow connections and disconnections within a small temperature range, for example between 80 and 85°C, 100 and 105°C, etc.

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8. Device according to any one of the preceding patent claims, characterized in that it is incorporated in a vehicle in which the wheels normally make contact with the ground or the underlying/supporting surface, 30 and in that the bridging by the bridging member(s) causes only a minimal change, for example a 3% change, in a medium flow produced by the pump, and a consequential large change in pressure producing, for example, an approximate 1% drop in pressure where the 35 first wheel(s) (2) drive(s) the second wheel(s) via the ground surface (24), which latter wheels therefore take over the driving from the system.

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9. Device according to any one of the preceding patent claims, characterized in that a delay in the bridging or disconnection and reconnection is minimized to 0.1-1.0 seconds, preferably 0.1-0.2 seconds.

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10. Device according to any one of the preceding patent claims, characterized in that, in the particular driving function of the vehicle, for example aerial travel, wheel-turning, tilting, etc., the arrangement
10 is arranged to allow a first value for the bridging or disconnection and reconnection in an above the ground state (aerial travel) or a wheel-turning state or tilting state for the vehicle, and a second value for
15 the bridging or disconnection and reconnection in a return from or adoption of states different from the respective said states.